In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently Amended) A process for manufacturing complex parts and devices comprising:

(a) utilizing a CAD environment to design a part or device to be created;

(b) converting the CAD designed part or device into a heterogeneous material and multi-part assembly model which can be used for multi-nozzle printing; and

(c) printing the designed part or device using multiple, different, specialized nozzles.

2.   (Original) The process of claim 1 further comprising using Boolean, scaling, smoothing, mirroring, or other operations to modify the CAD design prior to conversion into a heterogeneous material and multi-part assembly model.

3.   (Original) The process of claim 1 wherein in step (a) data taken from MRI, CT or other patient specific data is imported into the CAD environment to design the part or device to be created.

4.   (Original) The process of claim 1 wherein a biomimetic and non-biomimetic feature is designed into the part or device.

5.   (Original) The process of claim 1 wherein the part or device comprises a tissue engineering device and printing in step (d) involves direct deposition of cells or biological factors.

6. (Original) The process of claim 5 wherein direct cell deposition improves histological accuracy, cell ratios, and spatial patterning of cells in the part or device.

7. (Original) The process of claim 1 wherein the part or device produced comprises an artificial organ, a tissue scaffold, an artificial vasculature or channel system, or a sample for cytotoxicity testing.

8. (Original) The process of claim 1 wherein the part or device produced comprises a biochip, biosensor, bionic, cybernetic, mechanoactive, or a bioactive tissue scaffold.

9. (Original) The process of claim 1 wherein the part or device is used in drug delivery.

10. (Currently Amended) A multi-nozzle biopolymer deposition apparatus comprising:

(a) a data processing system which processes a designed scaffold model and converts it into a layered process tool path;

(b) a motion control system driven by the layered process tool path; and

(c) a material delivery system comprising multiple nozzles of different types and sizes which deposits for simultaneously depositing specified hydrogels with different viscosities thereby constructing a scaffold from the designed scaffold model.